

**ALAN S. CROSS, M. D.**

**CURRICULUM VITAE**

August, 2002

Alan S. Cross, M.D.  
Professor of Medicine  
University of Maryland Cancer Center  
22 South Greene Street  
Baltimore, Maryland 21201

EDUCATION

B.A.,                magna cum laude  
Harvard College, Cambridge, MA

M.D.                University of Pennsylvania, School of  
Medicine, Philadelphia, PA

Internship (Medical)

Presbyterian - St. Luke's Hospital  
Department of Medicine  
Chicago, Illinois

Residency

Presbyterian - St. Luke's Hospital  
Department of Medicine  
Chicago, Illinois

Harvard Medical Service – Boston  
CityHospital,  
Boston, Massachusetts

Subspecialty Fellowship Training  
(Infectious Diseases)

Strong Memorial Hospital  
Division of Infectious Diseases,  
Department of Medicine  
University of Rochester School of Medicine  
Rochester, New York

Walter Reed Army Institute of Research,

Washington, D.C.

CERTIFICATION

Diplomate, American Board of Internal Medicine

Diplomate in Infectious Diseases of the American Board of Internal Medicine

MAJOR RESEARCH INTERESTS Infections in the immunocompromised host; vaccine development; role of endotoxin and cytokines in inflammation and sepsis

MILITARY SERVICE

Colonel (Retired), Medical Corps

Department of Bacterial Diseases

Division of Communicable Disease and Immunology

Walter Reed Army Institute of Research

Washington, D.C. 20307-5100

"A" designator

Legion of Merit

Meritorious Service Medal

E. Karl Bastress Award for Excellence in Leveraging the Army Research and Development Program

Retired from Military Service

FACULTY POSITIONS HELD

Teaching Assistant, Rush Medical College

Teaching Fellow in Medicine, Harvard Medical School

Infectious Disease Fellowship - Instructor in Medicine

University of Rochester School of Medicine

Infectious Disease Research Fellowship

Department of Bacterial Disease

Walter Reed Army Institute of Research

Staff, Walter Reed Army Medical Center

Washington, D.C.

Attending Staff, Department of Medicine and Infectious Disease Service

Walter Reed Army Medical Center, Washington, D.C.

Assistant Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland

Associate Professor of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland

Professor of Medicine, Uniformed Services University of the Health Sciences Bethesda, Maryland

Professor of Medicine, University of Maryland School of Medicine

Affiliate Professor, University of Maryland at Baltimore School of Pharmacy

Associate member, Center for Vaccine Development, University of Maryland School of Medicine

Member, Graduate Faculty of the University of Maryland Graduate School, Baltimore

MAJOR ACADEMIC TASKS - (Walter Reed Army Medical Center)

Hospital Epidemiologist  
Walter Reed Army Medical Center  
Washington, D.C.

Medical Research Officer  
Department of Bacterial Diseases  
Walter Reed Army Institute of Research  
Washington, D.C.

Assistant Chief, Department of Bacterial Diseases  
Walter Reed Army Institute of Research  
Washington, D.C.

Chief, Department of Bacterial Diseases  
Walter Reed Army Institute of Research  
Washington, D.C.

MAJOR ACADEMIC TASKS - (UMAB)

Director, Program in Infectious Diseases

University of Maryland Cancer Center

Medical Director, UMCC Microbiology and Virology Laboratory

Director, Fellowship Program, Division of Infectious Diseases

PROFESSIONAL MEMBERSHIP

American Association for the Advancement of Science

American Society for Microbiology

Infectious Disease Society of America, Fellow 1984

International Endotoxin Society

Program Chairman, 2002

Executive Council, 2001-

International Cytokine Society

Immunocompromised Host Society

American Association of Immunologists

EDITORIAL TASKS

1980 – 1994	Editorial Review Board, WRAIR
1985 – 1989	Editorial Board, <u>Journal of Nosocomial Infection</u>
1987 -	Reviewer, Canadian Cystic Fibrosis Foundation
1998 -	Editorial Board, <i>Current Treatment Options in Infectious Diseases</i>
1999 -	Co-editor, <i>Infectious Diseases Clinic of North America: Sepsis</i> , June 1999

MAJOR CONSULTANT AND MEMBERSHIP ACTIVITIES

National:

1983 -	Consultant, Veterans Administration Merit Review Board for Infectious Diseases
1984 – 1987	Advisory Committee, Food and Drug Administration Anti-Infective Drugs Committee
1983 – 1988	Consultant, CDC, Guidelines for Nosocomial Infections
June – 1992	Member, NIH Special Review Committee for RFA AI-92-02
Dec. – 1991	Member, HA-1A Ad Hoc Data Review Committee, FDA
1990 1995	Executive Committee, VA Cooperative Study 316. Efficacy of passive immunization in the prevention of infections due to <i>Klebsiella</i> species and <i>Pseudomonas aeruginosa</i>
Apr. 1995	NIH Site Visit, General Clinical Research Center, Bowman-Gray School of Medicine

Apr. 1995	Ad Hoc Review Committee, NIH, Bacteriology & Mycology-1 Study S Section
Dec. 1995	Ad Hoc Review Committee, NIH, Bacteriology & Mycology-1 Study Section
Aug. 1996	Ad Hoc Review Committee, NIH, Bacteriology & Mycology-1 Study Section
June 1997	External Advisory Group, Infectious Diseases and Cancer Training Program, University of Kansas Medical Center
Sept. 1999-2002	VA Merit Review, Infectious Diseases Subcommittee Chairman, 9/01-4/02
Oct. 1999	Data Monitoring and Safety Board, Phase I Group A <i>S. pyogenes</i> Immunization Study (NIH sponsored)
Mar. 2000	NIH Site Visit, General Clinical Research Center, Bowman-Gray School of Medicine
Apr. 2000- 1999-2003	Reviewer, National Foundation for Infectious Diseases Grant Program Advisory Committee, Food and Drug Administration Anti-Infective Drugs Committee
2000-2002	Executive Council, International Endotoxin Society Program Committee Chairman (2002 meeting)
2001-	Henry Kunkel Society

Campus Activities - (Walter Reed Army Medical Center)

1974 - 1984	Infection Control Committee
1974 - 1978	Ad Hoc Committee on Antibiotic Usage
1978 - 1985	Ad Hoc Study Group on Bacterial Diseases
1986 - 1988	GS-14 Peer Review Committee
1986 - 1994	Scientific Review Committee
1989 - 1994	Chairman, Gram-negative Bacterial Products Advisory Committee
1989 - 1994	Member, Neisserial Vaccine Products Steering Committee
1990 - 1994	Member, Scientific Steering Committee for Immunomodulators
1990 - 1994	GS-12/13 Peer Review Committee

Campus Activities - (UMAB)

1994 - 1996	AML Clinical Utilization Committee (UMCC)
1994 - 1996	Chairman, Infection Control Committee (UMCC)
1994 - 1995	Search Committee, Bone Marrow Transplant Director (UMCC)
1994 - 1995	Search Committee, Faculty Candidate UMCC/Dept. Microbiology and Immunology
1994 -	Executive Committee, UMMS Infection Control Committee
1994 -	Antimicrobial Subcommittee of UMMS Therapeutics Committee
1994 - 1997	Clinical Laboratories Division Heads/Quality Assurance Committee
1994 -	Fellowship Search Committee, Division of Infectious Diseases

1996 - 1997 Interviewer, Admissions Committee, School of Medicine  
1997- Clinical Research Committee, Greenebaum Cancer Center  
1998- Department of Medicine, Appointments, Promotions and Tenure  
Committee  
1999- Member, Research Advisory Committee  
2000- Member, Strategic Plan 2000-2005 Steering Committee  
2000- Reviewer, American Cancer Society Institutional Research Grant  
2000-2001 Member, Recombinant DNA Committee  
2002- Data and Safety Monitoring/Quality Assurance Committee, University of  
Maryland Greenebaum Cancer Center, Chairman

#### TEACHING RESPONSIBILITIES

University of Maryland  
School of Medicine  
1995

Preceptor, Small Group Sessions in Host Defenses and Infectious Diseases (formerly Medical Microbiology and Immunology) – two 2 hour sessions per year. 1994 to present.

Lecture, one per year in Host Defenses and Infectious Diseases, 1994 to present.

PUBLICATIONS:

**Refereed Publications**

Chapters

1. Chapter 167: *Pseudomonas aeruginosa* in Principles and Practice of Infectious Disease, First edition, Mandell, Douglas and Bennett, Eds. John Wiley and Sons, Inc., New York, N.Y. 1979
2. Cross AS, Lowell GH: Stimulation of PMN Leukocyte Bactericidal Activity by Supernatants of Activated Mononuclear Cells and Long Term Lymphoid Cell Line in Cell Biology and Immunology of Leukocyte Function, M.R. Quastel, Ed., Academic Press, N.Y., San Francisco, London, 1979.
3. Steigbigel RT, Cross AS: Infections Associated with Hemodialysis and Chronic Peritoneal Dialysis. Current Clinical Topics in Infectious Diseases, Remington and Swartz (Ed.), Vol. 5:124-145, 1984.
4. Cross AS and Sadoff JC: Neurologic Sequelae to Pertussis, Diphtheria and Tetanus and Immunization. Handbook of Clinical Neurology, A.A. Harris (ED.), 1988, Vol. 8:227-251. Elsevier Science Publishers B.V. Amsterdam, New York.
5. Cryz SJ Jr, Cross AS, Furer E and Germanier R: Polyvalent Vaccine and Human Immunoglobulin for the Control of *Klebsiella* Infections in Bacteria and the Host, (Proceedings of Symposium held May 1985, Prague).
6. Sadoff JC, Wright CD, Kaufman B, Futrovsky S, Sidberry H, Collins H, Kim K and Cross AS: A Passive Immunization with Monoclonal Antibodies Against *E. coli* and *P. aeruginosa* in Bacterial Vaccines, edited by JB Robbins, RS Schneerson, D Klein, J Sadoff, MC Hardegree. Praeger, N.Y., Westport, CT, London, pp. 507-519, 1987.
7. Cross AS, Sadoff J, Gemski P, Asher L, Kim KS: The Relative Role of Lipopolysaccharide and Capsule in the Virulence of *E. coli*. Proceedings NATO Workshop: "Bacteria, Complement and the Phagocytic Cells". Maratea, Italy, April 1987, NATO ASI Series, Vol. H24, edited by F. Cabello & C. Pruzzo, pp. 319-334, Springer-Verlag. Berlin, Heidelberg, New York, London, Paris, Tokyo, 1988.
8. Cross AS: "Immunotherapy & Vaccines", In Ullmann's Encyclopedia of Industrial Chemistry, Vol. A14, pp. 92-104, 5th Edition. J Jr (ed.), VCH Verlagsgesellschaft, Weinheim (FRG), 1991, pp. 9-118.

9. Cross A: "Klebsiella", in Vaccines and Immunotherapy. J Jr (ed.), Pergamon Press, New York, Oxford, Beijing, Frankfurt, Sao Paulo, Sydney, Tokyo, Toronto, 1991, pp. 178-185.
10. Cross A: "Biologic Consequences of Bacterial Encapsulation", in Current Topics in Microbiology and Immunology. K. Jann and B. Jann (Ed.). Springer-Verlag, Berlin, Heidelberg, New York, London, Paris, Tokyo, Hong Kong 1990, pp. 87-96.
11. Cross AS, Sadoff J, Furer E, J Jr: Escherichia coli and Klebsiella Vaccines and Immunotherapy, Infectious Disease Clinics of North America. W. Schaffner, (Ed.), 4:271-282.
12. Cryz SJ Jr, Sadoff JC, Cross AS, Furer E Safety and Immunogenicity of a Polyvalent Pseudomonas aeruginosa O-Polysaccharide-Toxin A Vaccine in Humans. In Hoiby N, Pedersen SS, Shand GH, Doring G, Holder IA (Eds.): Pseudomonas aeruginosa, Vol. 42, pp. 177-183.
13. Kelly N and Cross AS: Non-Lethal and Lethal Production of Cytokines (TNF and IL6) in Response to Bacterial LPS. In, The Physiological and Pathological Effects of Cytokines. (Eds., C.A. Dinarello, M.C. Powanda, J.J. Oppenheim). Wiley-Liss, New York, Chichester, Brisbane, Toronto, Singapore, 1990, pp. 147-152.
14. Cross AS, Sadoff JC, Cryz SJ Jr: Vaccines Against Klebsiella and Pseudomonas Infections. In, The Molecular Approach to New and Improved Vaccines. GC Woodrow and MM Levine, Editors. Marcel Dekker, New York, Basel, pp. 699-714.
15. Cross AS: "Immunotherapy", in Vaccines and Immunotherapy. Cryz SJ Jr, Editor. VCH Verlagsgesellschaft, Weinheim, 1991, pp. 91-119.
16. Cross AS and Kelly N: Bacteria-Phagocyte Interactions: Emerging Tactics in an Ancient Rivalry, 1990. FEMS Microbiology Immunology 64:245-258.
17. Cross AS, Sadoff J, Opal S, Cryz SJ Jr: Immunotherapy of Gram-Negative Bacillary Sepsis: A Process-Oriented Approach. Contemporary Issues in Infectious Diseases: Treatment of Serious Infections in the 1990s, (Eds., Sande MA, Root RK), Vol. 9, pp. 77-92, 1991. Churchill Livingstone, New York, Edinburgh, London, Melbourne, Tokyo.
18. Lang AB, Furer E, Schurch U, Cross AS, Larrick JW, Cryz SJ: Human Monoclonal Antibodies to Pseudomonas aeruginosa Type-Specific Lipopolysaccharides Toxin A and Klebsiella Capsular Polysaccharide. Develop Biol. Standard 71:121-126, 1990.



19. Artenstein AW, Cross AS: Local and Disseminated Diseases Caused by *Pseudomonas aeruginosa*. In, *Pseudomonas aeruginosa as an Opportunistic Pathogen*. M Campa, M Bendinelli, and H Friedman (Eds). Plenum Press, New York, London, 1993, pp. 223-244.
20. Cross AS: The Use of Intravenous Immunoglobulin in Bacterial Infections, In, Intravenous Immunoglobulin Therapy. (PL Yap, editor), Churchill-Livingstone, Edinburgh, London, Madrid, Melbourne, New York and Tokyo, 1992, pp. 139-166.
21. Opal SM, Marra MN, Cross AS: Interaction of Bactericidal-Permeability Increasing Protein with Lipopolysaccharide and Experience in Animal Models of Gram-Negative Infections. In, *Mediators of Sepsis*, Ghanassia (ed)., 1994.
22. Cross AS, Sadoff J, Gemski P, Opal S: Selection of Bacteria for Animal Models of Sepsis, from the Second Consensus Development Conference on the Treatment of Radiation Injuries (14-17 April 1993), in "Advances in the Treatment of Radiation Injuries". T. MacVittie, J.F. Weiss, D. Browne, eds. Pergamon, Elsevier Science, 1995.
23. Cross AS, Opal SM: Therapeutic Intervention in Sepsis with Antibody to Endotoxin: Is there a Future? *J. Endotoxin Res.* 1:57-69, 1994.
24. Bhattacharjee AK, Cross AS, Opal SH, Warren HS, Sadoff JC: "*Escherichia coli* 0111: B4 J5 Mutant (Rc Chemotype) Vaccine Development for Use in Gram-negative Bacillary Sepsis" in: *Novel Therapeutic Strategies in the Treatment of Sepsis*, (Marcel Dekker, Inc, New York). Morrison DC & Ryan JL, eds., 1995, p1-12.
25. "IVIGs to Prevent and Treat Infectious Diseases", in *Immunobiology of Proteins and Peptides VIII* edited by ME Atassi and GS Bixler, Jr., Plenum Press, New York. p.123-130. (and *Adv. Exp. Med. Biol.* 383:123-130, 1995).
26. Cross AS and Opal SM: Endotoxin: It's Role in Gram-Negative Bacterial Infection, in *Current Opinions in Infectious Diseases*, D. Stevens, editor. Current Science, Ltd., London, UK. 8:156-163, 1995.
27. Borden EC, Crawford JC, Cross AS, Dillman RO, Ernstoff M, Hawkins MJ, Heyman M. Chapter 43. Toxicity of biologic response modifiers in Michael C. Perry, ed. "The Chemotherapy Sourcebook" 2d ed, Williams and Wilkins. Baltimore, Philadelphia, London, Paris, Bangkok, Buenos Aires, Hong Kong, Munich, Sydney, Tokyo, Wroclaw.. pp 833-841.
28. Cross AS and Cryz Jr SJ. Chapter 59. Vaccines against *Klebsiella*, *Pseudomonas* and Septicemic *E. coli* Infections in New Generation Vaccines, second edition, ed. Woodrow GC and Levine MM. Marcel Dekker, Inc. New York and Basel, p. 931-943, 1997.

29. Cryz, Jr., SJ, P Peduzzi, AS Cross, JC Sadoff, S Donta. Immunoprophylaxis against bacterial infection in the intensive care unit. Dig Surg, Karger Press, (in press).
30. Cross, AS. New generation of anti-endotoxin antibodies: new approaches to a vexing problem. Proceedings of the conference, "Diagnosis and Treatment of Radiation Injury", Rotterdam, The Netherlands, 31 August-3 September, 1998.
31. Bhattacharjee AK, and Cross AS. Bacterial Vaccines in the Prevention and Treatment of Sepsis, in Infectious Diseases Clinics of North America, edited by SM Opal and AS Cross, 1999 Jun;13:355-69.
32. Opal SM, Cross AS. Clinical trials for severe sepsis. Past failures and hopes, in Infectious Disease Clinics of North America, edited by SM Opal and AS Cross, 1999;13:285-97.
33. Cross AS, Opal SM, Bhattacharjee AK, Peduzzi P, Donta S, Furer E, Que J, Cryz S Jr. Immunotherapy of Sepsis: Flawed Concept or Faulty Implementation? Vaccine, 1999;17:S13-S21.
34. Held TK, Cross AS. Role of hematopoietic colony stimulating factors in sepsis. Current Opinion in Hematology, 1999;6:176-83.
35. Held TK, Cross AS. Sepsis. Current Treatment Options in Infectious Diseases. 2001;3:7-17.
36. Cross AS, Opal SM. "Interactions with the Compromised Host" in *Molecular Medical Microbiology*, M. Sussman, editor Academic Press 2001.
37. Bhattacharjee AK, Cross AS, and Opal SM. Vaccines against Bacterial Endotoxin, in *Sepsis*, editors, J-L Vincent, J. Carlet and S. Opal. Kluwer Academic Publishers, Norwell, MA. (in press March, 2002)

## Journal Refereed

### Articles

1. Edwards LD, **Cross AS**, Levin S, and Landau W: Outbreak of a Nosocomial Infection with a Strain of Proteus rettgeri Resistant to many Antimicrobials. Am. J. Clin. Path. 61:41, 1974.
2. **Cross AS**, Steigbigel RT: Pneumocystis carinii Pneumonia Presenting as Localized Nodular Densities. N. Engl. J. Med. 291:831, 1974.
3. Hall WJ, Douglas RG, Hyde RW, Roth FK, **Cross AS**, Speers DM: Pulmonary Mechanics after Uncomplicated Influenza A Infection. Am. Rev. Resp. Dis. 113:141, 1976.
4. **Cross AS** and Tramont ED: Comparison of Phlebitis Produced by Cephapirin and Cephalothin. Antimicrob. Agt. Chemother. 9:722-24, 1976.
5. **Cross AS** and Steigbigel RT: Infective Endocarditis and Access Site Infection in Patients on Hemodialysis. Medicine 55:453-466, 1976.
6. **Cross AS** and Tramont EC: Fevers of Unknown Origin. Military Medicine 141:761-63, 1976.
7. **Cross AS** and Lowell GH: Stimulation of Polymorphonuclear Leukocyte Bactericidal Activity by Supernatants of Activated Human Mononuclear Cells, Infection and Immunity 22:502, 1978.
8. **Cross AS**, Sadoff JC, Iglewski BH: Evidence in Humans for the Role of Pseudomonas aeruginosa Exotoxin. Am. J. Inf. Dis. 142:538-546, 1980.
9. Gemski P, **Cross AS**, Sadoff JC: K1 Antigen-Associated Resistance to the Bactericidal Activity of Serum. FEMS Microbiology Letter 9:193-197, 1980.
10. **Cross AS**, Roup B: Role of Respiratory Assistance Devices in Endemic Nosocomial Pneumonia. Am. J. Med. 70:681-685, 1981.
11. Sadoff JC, Sidberry H, Schilhab J, Hirshfield D, **Cross AS**: Opsonic and Bacterial Binding Activity of Immunoglobulin Preparation, In, Immunoglobulins. Characteristics and Uses of Intravenous Preparations, Alving B, Finlayson JS, Editors. DHHS Publication No. (FDA) 80-9005, pp. 63-72, 1981.

12. Sokol PA, Iglewski BH, Hager TA, Sadoff JC, **Cross AS**, McManus A, Farber BF: Production of Exoenzyme S by Clinical Isolates of Pseudomonas aeruginosa, *Infection Immunology* 34:147-153, 1981.
13. Weiss J, Victor M, **Cross AS**, Elsbach P: The Sensitivity of K1 Encapsulated Escherichia coli to Killing by the Bactericidal/Permeability-Increasing Protein of Rabbit and Human Neutrophils. *Infection and Immunology* 38:1149-1153, 1982.
14. Opal S, **Cross AS**, Gemski P: Antigen and Serum Sensitivity of Rough Escherichia coli. *Infection and Immunology* 37:956-960, 1982.
15. **Cross AS**, Zierdt CH, Roup B, Almazan R, Swan J: A Hospital Outbreak of Septicemia Due to Two Strains of Staphylococcus aureus. *Amer. J. Clin. Path.* 79:598-603, 1982.
16. **Cross AS**, Berger M, Lowell GH, Sadoff J: A Neutrophil-Activating Factor from a Continuous Lymphoid Cell Line Mediates Increased Number of Neutrophil C3b Surface Receptors and Increased Functional Activity. *Immunobiology* 163:277-278, 1982.
17. **Cross AS**, Allen J, Burke J, Duce G, Harris A, John J, Johnson D, Lew M, MacMillan B, Meers P, Skalova R, Wenzel R: Nosocomial Infections Due to Pseudomonas aeruginosa: Review of Recent Trends, *Rev. Inf. Dis.* 5:S837-S845, 1983.
18. **Cross AS**, Zollinger W, Mandrell R, Gemski P, Sadoff J: Evaluation of Immunotherapeutic Approaches for the Potential Treatment of Infections Caused by K1-Positive E. coli. *J. Inf. Dis.* 147:68-76, 1983.
19. **Cross AS**, Opal S, Kopecko D: Progressive Increase in Antibiotic Resistance of Gram-Negative Bacterial Isolates, Walter Reed Hospital 1976-1980: Specific Analysis of Amikacin, Gentamicin and Tobramycin Resistance. *Arch. Intern. Med.* 143:2075-2080, 1983.
20. Berger M, **Cross AS**: Lymphoblastoid Cell Supernatants Increase Expression of C3b Receptors on Human Polymorphonuclear Leukocytes: Direct Binding Studies with 125I-C2b. *Immunology* 51:431-440, 1984.
21. **Cross AS**, Gemski P, Sadoff JC, Orskov F, Orskov I: The Importance of the K1 Capsule in Invasive Infections Caused by E. coli. *J. Inf. Dis.* 149:184-193, 1984.

22. **Cross AS**, Wooldridge WH, Zollinger WD: Monoclonal Antibody 2-2-b Kills K1 Positive E. coli in Conjunction with Cord Blood Neutrophils and Sera but not with Spinal Fluid. *Pediat. Res.* 18:770-772, 1984.
23. **Cross AS**, Orskov I, Orskov F, Sadoff J, Gemski P: Identification of E. coli K1 Antigen. *J. Clin. Micro.* 20:302-304, 1984.
24. Berger M, O'Shea J, **Cross AS**, Folks TM, Chused TM, Brown EJ, Frank MM: Human Neutrophils Increase Expression of C3bi as well as C3b Receptors Upon activation. *J. Clin. Invest.* 74:1566-1571, 1984.
25. **Cross AS**: The Evolving Epidemiology of Pseudomonas aeruginosa *Eur. J. Clin. Micro.* 4:156-159, 1985.
26. **Cross AS**, Lowell GH, Palmblad J, Sadoff JC, Young L, Berger M: Mechanisms of Priming of Human Neutrophils by a Soluble Lymphoblastoid Cell Factor. *J. Immunology* 135:2074-2083, 1985.
27. Berger M, Birx DL, Wetzler EM, O'Shea JJ, Brown EJ: Calcium Requirements for Increased Complement Receptor Expression During Neutrophil Activation. *J. Immunol.* 135:1342-48, 1985.
28. Kim KS, **Cross AS**, Zollinger W, Sadoff J: Prevention and Therapy Experimental E. coli Infection with Monoclonal Antibody. *Infection & Immuno* 50:734-37, 1985.
29. Cryz SJ, Mortimer P. **Cross AS**, Furer E, Germanier R: Safety and Immunogenicity of Polyvalent Klebsiella Capsular Polysaccharide Vaccine in Humans. *Vaccine* 4:15-20, 1986.
30. **Cross AS**, Kim KS, Wright DC, Sadoff JC, Gemski P: The Relative Role of Lipopolysaccharide and Capsule in the Serum Resistance of Bacteremia Strains of E. coli. *J. Inf. Dis.* 154:497-503, 1986.
31. Kaufman BM, **Cross AS**, Futrovsky SL, Sidberry HF, Sadoff JC: Monoclonal Antibodies Reactive with K1-Encapsulated E. coli LPS are Opsonic and Protect Mice Against Lethal Challenge. *Inf. Immunol.* 52:617-619, May 1986.

32. Ballou WR, **Cross AS**, Williams DY, Keiser J, Zierdt CH: Colonization of Newly Arrived House Staff by Virulent Staphylococcal Phage Types Endemic to a Hospital Environment. *J. Clin. Micro.* 23:1030-1033, 1986.
33. Kim KS, Kang JH, **Cross AS**: The Role of Capsular Antigens in Serum Resistance and In vivo Virulence of Escherichia coli. *FEMS Micro. Letts.* 35:275-278, 1986.
34. Cryz SJ, **Cross AS**, Furer E, Chariatte N, Sadoff JC, Germanier R: Activity of Intravenous Immune Globulins Against Klebsiella. *J. Lab. Clin. Med.* 108:182-9, 1986.
35. Cross A: Nosocomial Aspergillosis. *J. Nosocom. Inf.* 4:6-9, 1987.
36. Cryz SJ, Furer E, **Cross AS**, Wegmann A, Germainer R, Sadoff JC: Safety and Immunogenicity of a Pseudomonas aeruginosa O-Polysaccharide-Toxin A Conjugate Vaccine in Humans. *J. Clin. Invest.* 80:51-56, 1987.
37. Opal SM, **Cross AS**, Palmer M, Almazan R: Group B Streptococcal Sepsis in Adults and Infants: Contrasts and Comparisons. *Arch. Intern. Med.* 148:641-645, 1988.
38. Baltimore RS, **Cross AS**, Dobek AS: The Inhibitory Effect of Sodium Alginate on Antibiotic Activity Against Mucoid and Non-mucoid Strains of Pseudomonas aeruginosa. *J. Antimicrob. Chemother.* 20:815-823, 1987.
39. Eliasson A, McClain JB, Rothman S, Dobek A, Malcolm J, **Cross AS**: A Survey of Diarrhea with Cefoperazone Therapy. *J. Antimicrob. Chemother.* 22:571-573, 1988.
40. Kim KS, Kang JH, **Cross AS**, Kaufman B, Zollinger W, Sadoff J: Functional Activities of Monoclonal Antibodies to O-Side Chain of Escherichia coli Lipopolysaccharide In vitro and In vivo. *J. Infect. Dis.* 157:47-53, 1988.
41. **Cross AS**, Sadoff JC, Kaufman B, Zollinger W: Use of Monoclonal Antibody Combinations in the Prevention of Bacteremia Caused by E. coli 018:K1:H7. *Serodiagnosis & Immunotherapy* 2:127-136, 1988.
42. Opal SM, **Cross AS**, Gemski P, Lyhte LW: Survey of Purported Virulence Factors of Escherichia coli Isolated from Blood, Urine and Stool Specimens. *Eur. J. Clin. Microbiol.* 7:425-427, 1988.

43. Opal SM, Johnson-Winegar AD, **Cross AS**: Staphylococcal Scalded Skin Syndrome in Two Immunocompetent Adults Caused by Exfoliating B Producing Staphylococcus aureus. J. Clin. Microbiol. 26:1283-86, 1988.
44. Vermeulen C, **Cross AS**, Byrne WR, Zollinger W: Quantitative Relationship Between Capsular Content and Killing of K1-Encapsulated E. coli. Inf. Immunol. 56:2723-2730, 1988.
45. Trautmann M, Cryz SJ, Sadoff JC, **Cross AS**: A Murine Monoclonal Antibody Against Klebsiella pneumoniae Infection. Microbiol. Pathogenesis 5:177-187, 1988.
46. Collins HH, **Cross AS**, Dobek A, Opal SM, McClain JB, Sadoff JC: Oral Ciprofloxacin and Anti-Lipopolysaccharide Monoclonal Antibody Protect Leukopenic Rats from Lethal Infection. J. Inf. Dis. 159:1073-1082, 1989.
47. **Cross AS**, Siegel G, Byrne WR, Trautmann M, Finbloom DS: Intravenous Immune Globulin Impairs Antibacterial Defenses of a Cyclophosphamide Treated Host. Clinical Exper. Immunology 76:159-164, 1989.
48. **Cross AS**, Sadoff JC, Kelly N, Bernton E, Gemski P: Pretreatment with Recombinant Murine Tumor Necrosis Factor/Cachectin and Murine Interleukin-1 Alpha Protects Mice from Lethal Bacterial Infection. J. Exp. Med. 169:2021-2027, 1989.
49. **Cross AS**, Sidberry H, Sadoff JC: The Human Antibody Response During Natural Bacteremia Infection with Gram-Negative Bacilli Against Lipopolysaccharide Core Determinants. J. Infect. Dis. 160:225-236, 1989.
50. Artenstein AW, **Cross AS**: Aminoglycosides Inhibit Endotoxin Reactivity. J. Antimicrob. Chemother. 24:826-828, Nov. 1989.
51. Cryz SJ, **Cross AS**, Sadoff JC, Que JU: Human IgG and IgA Subclass Response Following Immunization with a Polyvalent Klebsiella Capsular Polysaccharide Vaccine. Eur. J. Immunol. 18:2073-2075, 1989.
52. Opal SM, **Cross AS**, Gemski P, Lyhte LW: Aerobactin and Alpha-Hemolysin as Virulence Determinants in Escherichia coli Isolated from Human Blood, Urine and Stool. J. Inf. Dis. 161:747-749, 1990.

53. Opal SM, **Cross AS**, Kelly N, Sadoff JC, Bodmer MW, Palardy JE, Victor GH: Efficacy of a Monoclonal Antibody Directed Against Tumor Necrosis Factor in Protecting Neutropenic Rats from Lethal Infection with Pseudomonas aeruginosa. J. Infect. Dis. 161:1148-1152, 1990.
54. Cryz SJ, **Cross AS**, Sadoff JC, Furer E: Synthesis and Characterization of Escherichia coli 018 O-Polysaccharide Conjugate Vaccines. Inf. Immun. 58:373-377, 1990.
55. Kim KS, **Cross AS**, Sadoff JC: Monoclonal Antibody to the O-Side Chain of Escherichia coli Enhances the Efficacy of Cefotaxime Against Experimental K1 E. coli Infection by a Homologous O type. Serodiag and Immunother. 4:95-99, 1990.
56. Kim KS, **Cross AS**, Kaufman B, Zollinger W, Sadoff J: Murine Hybridoma Antibodies Enhance Bactericidal Activity of Human Cord Blood Against K1 E. coli Strains. Pediat. Res. (in press).
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Therapeutic Treatment and Prevention of Infections with a Bioactive Material(s) encapsulated within a Biodegradable-Bio-Compatible Polymeric Matrix, U.S. Patent Application No. 09/055,505, issued April 6, 1998.

Use of Antibodies to Sialidase as Anti-infectious Agents and Anti-inflammatory Agents. U.S. Patent Application No. 6,066,323, issued May 23, 2000.

Use of antibodies to sialidase as anti-infectious agents and anti-inflammatory agents. U.S. Patent application 09/399, 954, issued 9/20/99.

MAJOR INVITED LECTURES:

1979

"Opportunistic Infection in the Compromised Host", and "Staphylococcal Bacteremia". Medical-Surgical Training Conference, Garmisch-Partenkirchen, Germany.

1980

Cross AS, Sadoff J, Iglewski B: "Evidence for the Role of Toxin A in the Pathogenesis of Infection with Pseudomonas aeruginosa", Gordon Research Conference on Microbial Toxins and Pathogenesis, Wolfeboro, N.H.

1983

"Epidemiology of Infections Caused by P. aeruginosa". Symposium, ASM Annual Meeting, New Orleans.

1984

"Immunotherapy of Gram-Negative Infections", 120th ARCOM Symposium, Charleston, South Carolina.

1987

"Epidemiology of Infections Caused by P. aeruginosa". ASM Annual Meeting.

"Relative Role of LPS and Capsule in the Serum Resistance of E. coli". NATO Advanced Workshop "Bacteria, Complement and the Phagocytic Cell". Maratea, Italy.

1988

"Role of Intravenous Immunoglobulins in the Treatment of Bacterial Infections", XX Congress, International Society of Blood Transfusion/British Blood Transfusion Society, London, England.

"Immunization with Conjugate Vaccines", GAP Conference, Cystic Fibrosis Foundation, Williamsburg, VA.

"Prospects for Immunotherapy of Invasive Infections Caused by K. pneumoniae and E. coli". Joint Israel Defence Forces - U.S. Army Conference on Vaccines of Military Importance. Ramat Gan, Israel.

1989

"The Use of IVIG in Sepsis", in New Directions in the Clinical Use of IVIG, Charlotte, North Carolina, 17-18 March 1989.

1990

"Bacteria-Phagocyte Interactions", Third Discussion Meeting on Phagocyte Function, Edinburgh, Scotland.

"Use of IVIG in Bacterial Infections" in "IVIG: Indications in HIV Infection and AIDS", Symposium, Rudolf Virchow University, Berlin.

"Immunotherapy of Sepsis", in "Treatment of Serious Infections in the 1990's: Antimicrobials and Host Factors", Carmel, California.

"Advances in the Immunotherapy of Septic Shock". Grand Rounds, Madigan AMC, Tacoma, Washington.

1991

"Immunotherapy of Septic Shock". Grand Rounds, Walter Reed Army Medical Center, Washington, D.C.

"Development of a Synthetic Lipid A Analogue Vaccine", in Newer Aspects of the Adjuvant Action of Lipid A and its Analogs, Airlie, Virginia.

"Non-antibiotic Management of Infectious Diseases, including Globulin for Sepsis: Fifth Biennial Symposium on Current Topics in Clinical Infectious Diseases, Roanoke, Virginia.

"Immunotherapeutic Approaches to the Treatment of Gram-negative Bacterial Sepsis", Tri-Service Infectious Diseases Meeting, San Diego, California.

"Immunotherapy of Septic Shock", Annual Symposium, Greater Washington Infectious Diseases Society.

"The Use of Hyperimmune Immunoglobulin for the Prophylaxis of Gram-negative Sepsis", New Advances in the Treatment of Endotoxemia and Sepsis, Philadelphia, Pennsylvania.

"Non-antibiotic Approaches to the Treatment of Septic Shock", Grand Rounds, Manhattan Veterans' Affairs Medical Center.

"Opsonophagocytic Properties of Different Immunoglobulin Preparations", at 17th International Congress of Chemotherapy, Berlin, Germany.

"Cytokine-Mediated Host Defenses Against E. coli", at Bureau of Biologics, Washington, D.C.

Clinicopathologic Conference, "Hepatic Candidiasis", Discussant. Walter Reed Army Medical Center.

"Progress in the Immunotherapy of Septic Shock", Center for Vaccine Development, University of Maryland, Baltimore.

#### 1992

"Importance of an LPS-Initiated, Cytokine-Mediated Host Defense Mechanism Against Gram-Negative Bacteria". NIAID, Bethesda, Maryland.

#### 1993

"Selection of Bacteria for Animal Models of Sepsis", Second Consensus Development Conference on the Treatment of Radiation Injuries. Armed Forces Radiobiology Research Institute, Bethesda.

"Update in the Immunotherapy of Sepsis", Philippine College of Physicians, Annual Meeting, Manila.

"Where Do We Stand with Antibody Treatment of Gram Negative Sepsis", in Symposium, Use of Antibody Therapy to Prevent and Treat Infectious Diseases in Neonates and Children", Washington, D.C.

"Use of Hyperimmune Immunoglobulin", Advances in the Diagnosis, Prevention and Treatment of Endotoxemia and Sepsis Philadelphia.

"Clinical Results of Trial with Klebsiella-Pseudomonas IVIG", in Development of Hyperimmune IVIGs, Pasadena, CA.

#### 1994

"Development of Bacterial Vaccines", in Infectious Diseases Grand Rounds, University of Medicine and Dentistry of New Jersey, New Brunswick, NJ.

"Cytokine Responses to Infection", Society for Pediatric Research, Annual Meeting, Seattle, Washington.

Invited Discussant, American Federation for Clinical Research, National Meeting, Baltimore.

"Development of Hyperimmune Immunoglobulins in the Prevention of Gram-Negative Bacterial Infection", UMCC Grand Rounds.

"Use of Pseudomonas aeruginosa Vaccine in Non-Cystic Fibrosis Population". Cystic Fibrosis Foundation. 8th National Meeting, Orlando, FL.

"Immune-Based Therapy for the Treatment of Bacterial Sepsis". 11th Annual American College of Physician, Army Regional Meeting. Reston, VA.

"IVIGs to Prevent and Treat Infectious Diseases", International Symposium on Immunobiology of Proteins and Peptides, Rio Rico, Arizona.

"Clinical syndromes caused by Pseudomonas aeruginosa and their treatment", Grand Rounds, Brown University (Memorial Hospital of Rhode Island). Providence, RI.

"Status of the Federal Hyperimmune Immunoglobulin Trial," Infectious Diseases Research Seminar, Brown University School of Medicine. Providence, RI.

"Update on Clinical Trials in the Treatment of Sepsis, Medical Grand Rounds, Sibley Hospital, Washington, DC.

## 1995

"Update on antifungal therapy," Medical Ground Rounds, University of Maryland.

"Septicemia", Grand Rounds, Montgomery General Hospital, Olney, MD.

"Review of recent clinical trials in the treatment of sepsis." Hematology Grand Rounds, Johns Hopkins University Hospital.

"Animal models in the investigation of septic shock", in Symposium: "Septic Shock: Should We Give Up?" 35th ICAAC, San Francisco, CA.

"Novel approaches to the treatment of sepsis: Lessons learned and future directions". Sepsis and Septic Complications, Defense and Civil Institute of Environmental Medicine, Toronto, CANADA.

"Flesh Eating Bacteria", Seminar, St. Mary's College of Maryland.



1996

"Prevention of sepsis" in Inflammation and Multiple Organ Failure: Mechanisms and Therapy in Trauma and Burns, Snowbird, Utah.

"Critical ICU Pathogens", Workshop, Society of Critical Care Medicine, New Orleans, LA.

"Role of Passive Immunization in the Prevention of Infection in the ICU", Workshop on Anti-Infective Strategies, Society of Critical Care Medicine, New Orleans, LA.

"Development of Anti-endotoxin Vaccine", Food and Drug Administration, Center for Biologics Evaluation and Research, Bethesda, MD.

Medical Grand Rounds, "Septic Shock", Harbor Hospital Center, Baltimore, MD.

"Development of anti-endotoxin vaccine for sepsis", Seminars in Clinical and Diagnostic Pathology, University of Maryland.

"The development of an anti-endotoxin (J5) vaccine for the active and passive treatment of sepsis". Seminar, Department of Microbiology and Immunology, Uniformed Services University of the Health Sciences, Bethesda, MD.

"Development of an Anti-Endotoxin Subunit Vaccine for Human Use". Molecular Basis of Sepsis, Woods Hole, MA.

1997

"Immunotherapeutic approaches to the treatment of sepsis", Infectious Disease Grand Rounds, University of Massachusetts Medical Center, Worcester, MA.

"Treatment of sepsis with anti-endotoxin and type-specific immunoglobulins", 4th International Congress on the Immune Consequences of Trauma, Shock and Sepsis. Munich, Germany.

"Animal Models Made Easy". 7th Annual IBC International Symposium on Sepsis, Washington, D.C.

"Role of Sialidase in Neutrophil Trafficking". 19th Phagocyte Workshop, Washington, D. C.

"Gram-negative bacterial sepsis: The enduring conundrum". State-of-the-art mini-lecture. ICAAC, Toronto, Canada.

1998

"Current status of anti-endotoxin antibodies in the therapy of sepsis". in "Inflammation and the Surgical Patient: Mechanisms and therapy in trauma and burns", Snowbird, Utah.

"Outpatient management of febrile neutropenia", J.P.Sanford Lecture, University of Texas Southwestern Medical Center.

"A new generation of anti-endotoxin antibodies: new approaches to a vexing problem", Diagnosis and treatment of Radiation Injury. Rotterdam, the Netherlands.

"Passive immunotherapy for the treatment of Gram-negative bacterial infection: future prospects". Symposium on the Occasion of the 100<sup>th</sup> Anniversary of the Swiss Serum and Vaccine Institute, Berne, Switzerland.

"Infections in the Non-HIV-infected Compromised Host", American College of Physicians' Meeting, Army Section, Reston, VA.

1999

"A detoxified endotoxin complex vaccine for the active prophylaxis or passive treatment of sepsis". IBC Eighth Annual Conference on Sepsis, Endotoxemia and Related Disorders, Baltimore, MD.

"Diagnosis and management of infections diseases in the non-HIV compromised host" Medical Grand Rounds, Brooke Army Medical Center, San Antonio, Texas, (Visiting Professor).

"Immune Modulation in the Adjunctive Therapy of Sepsis", Seminar, Brooke Army Medical Center.

"New Directions in the Treatment of Febrile Neutropenia", Hematology/Medical Oncology Section Conference, Cancer Institute at Washington Hospital Center, Washington, D.C.

"Approaches to the Immunotherapy of Sepsis", Visiting Professor, 37<sup>th</sup> Annual Symposium on Critical Care, Trauma and Emergency Medicine. Las Vegas, NV. March 4-5, 1999.

"Management of Infections in the Non-HIV Immunocompromised Host". March 4-5, 1999, Las Vegas.

"Biologic Warfare and Bioterrorism from the Perspective of Emergency Medical Physicians and Intensivists", March 4-5, 1999.

"Infections in the Critically Ill Patient", March 4-5, 1999, Las Vegas.

“Advances in the Immunotherapy of Sepsis”, Lecture Series, Walter Reed Army Institute of Research, May 25, 1999.

“Anti-endotoxin Antibody Therapy of Sepsis”, Department of Biochemistry Seminar, University of Virginia, Charlottesville, September 23, 1999.

“Biological Warfare and Bioterrorism”, at the symposium, “Synergies in Infectious Diseases”, Tacoma, Washington, October 1, 1999.

“The Immunotherapy of Sepsis: Waiting for Godot”, Medical Grand Rounds, Robert Wood Johnson Medical School, New Brunswick, New Jersey, November 24, 1999.

“The Challenge of Hospital Sepsis”, Surgical Grand Rounds, Robert Wood Johnson Medical School, New Brunswick, New Jersey, November 24, 1999.

#### 2000

“Treatment of Fungal & Bacterial Infections in Cancer Patients,” Moderator, National Oncology Consultants Meeting Carlsbad, CA October 6-7, 2000.

#### 2001

“New Approaches to the Treatment of Sepsis”, Invited Speaker, Gordon Research Conference on Phagocytes, New London, CT, June 13, 2001.

“Role of LPS in Innate Immunity”, Henry Kunkel Society Annual Meeting, New York, May 3, 2001.

“Recent Advances in the Treatment of Sepsis”, Medical Grand Rounds, University of Maryland Medical Center, February 14, 2001.

“Treatment of Fungal Infection in The Immunocompromised Host”, Walter Reed Army Medical Center, August 14, 2001.

“Therapy of Gram-positive and Gram-negative Bacterial Sepsis”, at the Annual Meeting of the Infectious Diseases Society of New Jersey, Monroe Township, December 5, 2001

“Current Status of a *Escherichia coli* J5 Detoxified LPS/ Group B Meningococcus Outer Membrane Complex Vaccine for Sepsis”, Seminar, Center for Vaccine Development, University of Maryland, December 5, 2001

#### 2002

“The Ultimate Form of Mimicry: Sialic Acid Modulation in the Pathogenesis of Microbial Infection”, Seminar, MRC Immunochemistry Unit, Department of Biochemistry, Oxford University, Oxford, UK , April 9, 2002.

“Update on Sepsis”, Medical Grand Rounds, St. Agnes Medical Center, Baltimore, MD May 9, 2002.

“An Escherichia coli J5 detoxified LPS/group B meningococcal outer membrane protein vaccine for the prevention and treatment of sepsis”, presented at New Approaches to Bacterial vaccine Development, Munich, Germany, May 27-29, 2002

Co-chair, “Hot topics: Treatment of Sepsis”, Immunocompromised Host Society Meeting, Bergen, Norway, June 27, 2002.